

10/670,430
Examiner Donald J. Loney
Art Unit 1772

REMARKS

The present invention provides a solution to the challenge of continuous roll-forming of a decorative laminate of polymer films which is dimensionally stable, and which may thereby include a print pattern -- including relatively fine patterns such as small dots or diamonds or intersecting lines -- which a) does not distort as a result of the roll-forming process, and b) retains texture in one or more of the polymer film layers after the roll-forming production and after thermoforming the laminate onto a finished part. Because the polymer film layers of laminates have orientated polymer chains which produce distortion of the films when placed under the stresses of roll-forming, any print pattern which is placed on the film layers is visibly distorted in the finished product. By matching the removable web carrier to counteract the distortion tendencies of the film layers, a roll-formed laminate can be made without distortion. This allows complex and fine print patterns to be made on the film layers without apparent distortion, and allows texture to be embossed and retained in the laminate.

These novel properties of the invention are explained and defined in the specification at page 7: "As used herein, the term "dimensionally stable" refers to the property of web carrier which does not distort or deform when adhered to one or more of the polymer films, and maintains its dimensions and the dimensions of the layers of a laminate to which it is attached within design parameters for the end use application of the laminate." Also, the dimensional stability of the laminate as a result of the "matched" web carrier acts to retain texture embossed into one or more of the film layers. The embossed texture is also retained as the laminate structure is thermoformed to produce a final part such as a textured contoured panel. The invention thus provides a substantial improvement over prior art laminates which can not be made with multiple polymer film layers in a roll-forming process without distortion and without loss of embossed texture in one or more of the layers.

The concept of "dimensional stability", which has been a significant problem in the continuous roll-forming production of high-quality laminates for such applications as interior decorative panels, is not addressed by the cited prior art. For example, in prior art laminates made by continuous roll forming, which use polyester as a carrier, the polyester carrier does not have adequate dimensional stability to prevent print distortion and allow processing with embossing temperatures required to produce acceptable texture retention when the laminate is

10/670,430
Examiner Donald J. Loney
Art Unit 1772

thermoformed. Therefore, laminates which have a polyester carrier cannot be used in applications which require a) a stable print pattern, b) texture retention, and c) thermoforming.

Because the prior art does not recognize and address the problems of continuous roll-forming of laminates of polymer films with a web carrier without distortion (a "dimensionally stable" laminate), and therefore does not teach the claimed combinations of polymer films and a balanced web carrier, reconsideration of the rejections of the claims as amended is respectfully requested.

Claims 1-6, 8, 9, 11-18, 20-31, 33-41 and 44-57 and 59-62 have been rejected under 35 U.S.C. 102(b) as anticipated by Peskin, U.S. Patent No. 5,897,735 ("Peskin"). The Peskin patent describes a process for transferring a printed image from a transfer paper onto a layer of embossing resin on a "carrier", or printing an image directly on to embossing resin. What Peskin calls a "carrier" supports embossing resin, which by nature is an amorphous material which is intended to be distorted to create a textured topography. Therefore the "carrier" in Peskin is not for the purpose of maintaining dimensional stability of laminate as claimed in this application. Peskin does not disclose a web carrier in contact with a polymer film layer of the laminate. Peskin's novel use of the embossing resin is to apply an image to it. See Peskin, column 3, lines 10-12: "Nowhere in the prior art is it suggested that embossing resin could be used as the carrier for a digitally produced and printed image...". A transparent film is then placed over the embossing resin to protect the image. Peskin does not address or provide a solution for distortion of the layers caused by roll-forming as in a continuous laminator. Therefore, the carrier is not selected, designed or used as a dimensional stabilizer to the substrate or the resin layer with the printed image to prevent distortion of the printed image, and for retention of embossed texture. For this reason the laminate described by Peskin does not meet the claim limitations of "the web carrier selected to have a bonding force with the first polymer film to provide dimensional stability to the laminate as a whole". Because this limitation is present in each of the independent claims rejected, withdrawal of this rejection is respectfully requested.

Claims 1-6, 8, 9, 10, 14-18, 20, 23-31, 35-41 and 44-46, 49-57, 60 and 61 were rejected under 35 U.S.C. 102(b) as anticipated by Kowalski, U.S. Patent No. 4,693,926 ("Kowalski"). The Kowalski patent describes a fire-resistant decorative laminate for aircraft, which is made in sheets and includes layers of aluminum foil sheets. See Kowalski, column 4, line 54 "sheet

10/670,430
Examiner Donald J. Loney
Art Unit 1772

laminating system". Kowalski is not concerned with production of laminates by continuous roll-forming and therefore does not address the problem of distortion of the layer or any image on the layers. Also, because Kowalski uses aluminum sheets in the laminate, the end product cannot be thermoformed, so the problem of distortion-free thermoforming as claimed by the application is not anticipated. Because the resinous embossing film 16 in Kowalski is not embossed in a heated roll-forming process, there is no consideration of maintaining dimensional stability of the laminate at temperatures required for embossing. These being limitations of the rejected claims, withdrawal of this rejection is respectfully requested.

Dependent claims 7, 19, 32, 42, 43 and 58 were rejected under 35 U.S.C. 103(a) as unpatentable over Peskin in view of Johnson. These claims define:

thickness ranges of the first and second polymer films and embossing resin layer
(claims 7, 19, 32);

a second web carrier removably attached to the second polymer film (claims 42, 58);

and materials from which the second web carrier can be made (claim 43).

None of these limitations, in the context as claimed as a "dimensionally stable" laminate, as defined by the corresponding independent claims, are disclosed or suggested by the Peskin or Johnson patents. As the Examiner acknowledges, the primary reference of Peskin does not teach thicknesses of the laminate layers at all. Neither does Johnson. Therefore, the two references as combined do not suggest the claimed ranges which result in a dimensionally stable roll-formed laminate.

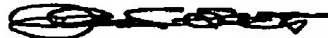
10/670,430
Examiner Donald J. Loney
Art Unit 1772

If there are any other fees necessitated by the foregoing communication, please charge such fees to our Deposit Account No. 50-0959, referencing our Docket No. 076596.1001.

Respectfully submitted,
ROETZEL & ANDRESS

NOV. 29, 2005

Date



James C. Scott
Reg. No. 35,351
1375 E. 9th Street
One Cleveland Center, 9th Floor
Cleveland, Ohio 44114
(216) 623-0150 (reception)
(216) 615-4832 (direct)
(216) 623-0134 (facsimile)

244880.1.076596.1001